Goddard Procedures and Guidelines

DIRECTIVE NO.	GPG 1710.1G	**APPROVED BY Signature:**	*Original Signed by*
EFFECTIVE DATE:	July 31, 2003	**NAME:**	A. V. Diaz
EXPIRATION DATE:	July 31, 2008	**TITLE:**	Director

Responsible Office: 300 / Office of Systems Safety and Mission Assurance

Title: Corrective and Preventive Action

PREFACE

P.1 PURPOSE

This procedure establishes the process for initiating and implementing corrective actions (CA) and preventive actions (PA).

P.2 APPLICABILITY

This procedure applies to all Goddard Space Flight Center (GSFC) products and processes covered by the scope of the GSFC Quality Management System (QMS).

P.3 AUTHORITY

NPD 1280.1, NASA Management System Policy

P.4 REFERENCES

a. NASA Federal Acquisition Regulation Supplement (NFS) Part 1846
b. GPG 1060.1, Management Responsibility
c. GPG 1060.2, Management Review and Reporting for Programs and Projects
d. GPG 5100.4, Supplier Quality Audits
e. GPG 5340.2, Control of Nonconformances
f. GPG 5340.3, Preparation and Handling of Alerts and Safe Alerts
g. GPG 9980.1, Internal Audit System

P.5 CANCELLATION

GPG 1710.1F, Corrective and Preventive Action

P.6 SAFETY

Not applicable.

P.7 TRAINING

Training in the use of the Nonconformance Reporting/Corrective Action System (NCR/CAS) database can be obtained from the Systems Management Office, Code 306. In addition, the database has a link to an extensive User Guide. A training module is also available at http://ohr.gsfc.nasa.gov/DevGuide/ISO/home.htm addressing the application of this procedure.

P.8 RECORDS

Record Title	Record Custodian	Retention
NCR/CAS database	Maintained by Code 306 and accessible to on-site employees and contractors	*NRRS 8/36.5 - Handle as Permanent pending retention approval

**NRRS – NASA Records Retention Schedules (NPG 1441.1)*

P.9 METRICS

Directorates report on Nonconformance Report (NCR) status (including CA status) in accordance with GPG 1060.2. Overall Center nonconformance reporting metrics and results of PA analysis are reported as part of QMS management reviews per GPG 1060.1.

P.10 DEFINITIONS

a. Corrective Action (CA) - Action taken to determine and correct the root cause of a nonconformance and the follow-up action undertaken to assess the effectiveness of the root cause correction.

b. NCR/CAS Database (NCR/CAS) – An interactive on-line database, accessed via the GSFC QMS web site, used to document and track the status and CA of customer complaints; findings resulting from internal, supplier or third party audits; process nonconformances not associated with the processing of a discrete product; and systemic problems identified through nonconformance data analysis.

c. Nonconformance – Non-fulfillment of a specified requirement. This includes on-orbit anomalies.

d. Nonconformance Lead (NCL) - An individual, identified within the NCR/CAS database, who has the authority to process project/organization nonconformance reports (NCRs), including any required corrective action approval and follow-up.

e. Quality Management System Council (QMSC) - A group of representatives from all GSFC Directorates, chaired by the Quality Management System Representative (QMSR), responsible for advising the QMSR regarding QMS effectiveness.

f. Preventive Action (PA) - Action taken to eliminate the causes of a potential nonconformity in order to prevent occurrence.

g. Problem Report/Problem Failure Report (PR/PFR) Database - An inter-active on-line database, accessed via the GSFC QMS web site, used to document and track the status of product nonconformances and associated dispositions.

h. Spacecraft On-Orbit Anomaly Reporting System (SOARS) - An inter-active on-line database, accessed via the GSFC QMS web site, used to document and track the status of mission operations anomalies and associated dispositions.

PROCEDURES

1. Nonconformances resulting from internal audits, supplier audits, third party audits, and customer complaints are documented as NCRs in the NCR/CAS database as representative of systemic or potentially systemic problems. CA shall be determined and implemented for NCRs documented in the NCR/CAS.

> **NOTE:** Product and product processing nonconformances are documented and controled in accordance with GPG 5340.2. Such nonconformances are processed to correct the product, accept it, or otherwise mitigate the product nonconformance, and do not require CA as defined herein.

The CA shall define the actions to be taken, action responsibility, and a schedule for completion and follow-up verification of the effectiveness of the CA.

Determination of CA shall include consideration of the preparation of an Alert/Safe Alert, in accordance with GPG 5340.3, when applicable to the nonconformance.

2. CA for customer complaints received after dissolution of a Project shall be determined, documented and approved in the on-line NCR/CAS database by the cognizant Directorate organization

3. For NCRs generated as a result of an internal audit (see GPG 9980.1), the designated NCL shall determine, document, and approve CA in the NCR/CAS database. For NCRs generated as a result of supplier audits (see GPG 5100.4), the applicable GSFC Lead Auditor is responsible for assuring that the supplier's CA responses are entered into the NCR/CAS database.

4. Follow-up verification of CA implementation and effectiveness shall be scheduled and approved by the NCL in the NCR/CAS. The Lead Auditor shall determine the need for and perform independent follow-up CA verification of internal audit NCRs in accordance with GPG 9980.1.

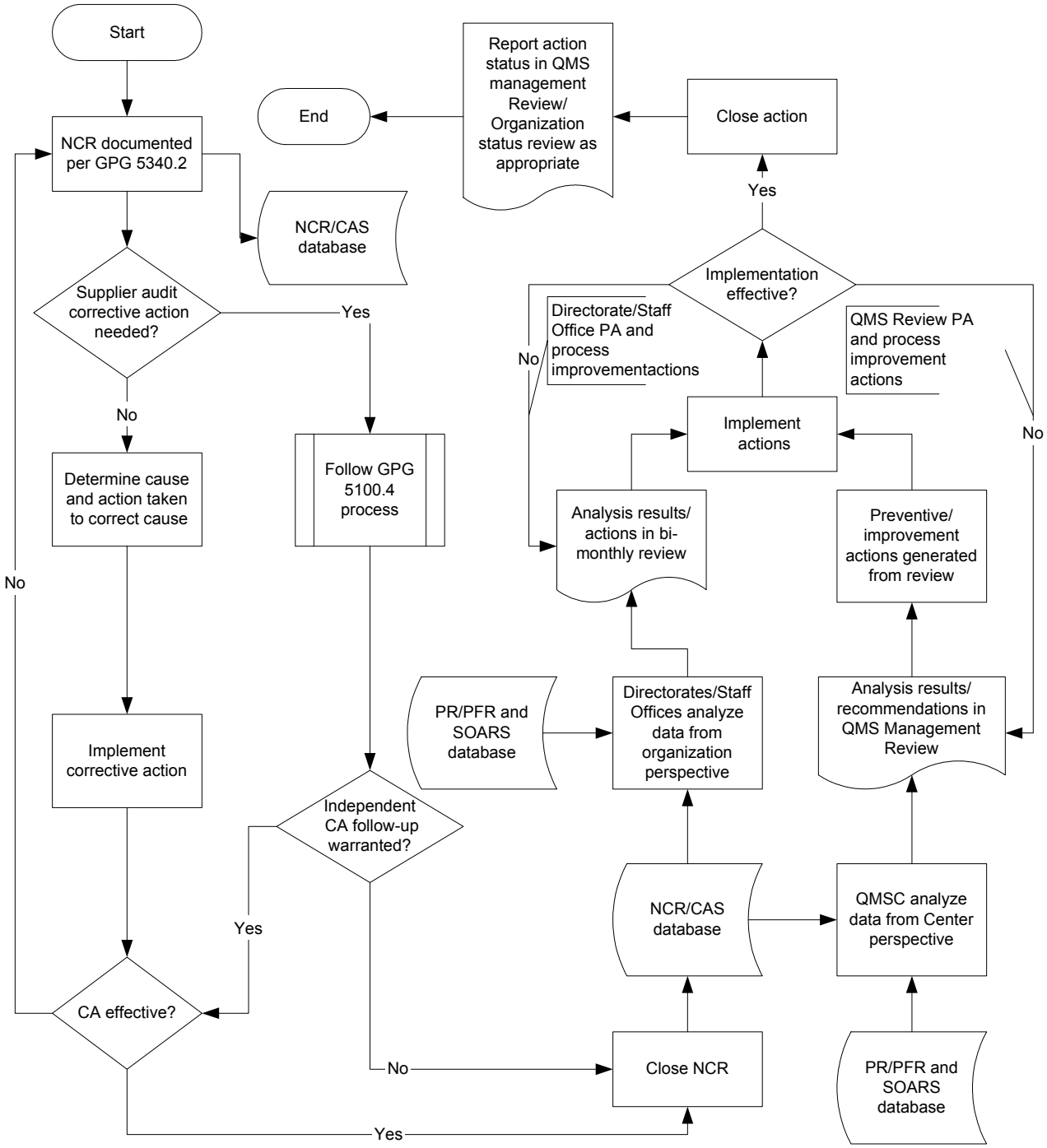
5. The NCL can close an NCR only when CA has been verified as being implemented and effective.

6. The QMSC shall review and analyze the PR/PFR, SOARS, and NCR/CAS, for trends or potentially systemic problems and make applicable recommendations for PA or process improvement to Executive Management as part of the Management Review of the QMS per GPG 1060.1. Actions to correct systemic or potentially systemic problems shall be documented as NCRs in the NCR/CAS.

7. PA or process improvement actions resulting from the QMS Management Reviews shall be recorded and tracked by the QMSC in accordance with GPG 1060.1.

8. As part of bi-monthly QMS implementation and NCR status reporting required by GPG 1060.2, Directorates/Staff Offices shall review and analyze organization-specific nonconformances, product dispositions and CAs and report on organization trends or systemic problems and associated PA and/or process improvements undertaken.

Corrective and Preventive Action



CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	08/12/98	Initial Release
A	10/06/98	Header and footer changes. Added 2.1.5 and indicated responsibility for NCR/CA data retrieval and analysis in 2.2.1. Identified responsibilities for maintenance of quality records.
B	04/21/99	Modified records identified in P6 and reflected the NCR/CA database's accessibility. Extensive format and content changes (primarily section 2.1). Deletion of MRB references. Addition of NCL references. Expanded details of corrective action for supplier audit NCR's. Added Note in 2.1.2. Added QMSC definition. Deleted redundant "Determine remedial action" block in flowchart. Modified 2.2.2 to indicate preventive action recommendations come from the QMSR.
C	06/23/99	Re-titled P4(d); added P4(e); P6 - revised retention period for NCR/CA records consistent with GPG 5340.2; 1(d) and 1(f) revised to eliminate reference to "defect" and "undesirable situation"; revised 2.1.1 for consistency with GPG 5340.2; 2.1.2 & 2.1.4 - added reference to GPG 5100.4; 2.1.5 added "internal" before "audit NCR's"
D	08/18/99	P1 - changed "procedure" to "process". Revised last sentence of 2.1.1 to remove "when actions are to be initiated". P6 - Added parenthetical to Preventive Action Action Items record. 2.1.1(e) - re-added safety impacts to corrective action criteria list. Added "End" bubbles to flowchart.
E	11/02/99	P4 - Added reference to GPG 4520.2 P6 - removed Preventive Action Action Items from quality records table. 2.2.1 - Analysis provided to QMSC rather than QMSR.

CHANGE HISTORY LOG (continued)

Revision	Effective Date	Description of Changes
F	01/17/03	- Updated to current GPG format. - P.4 – GPG 1060.2 reference added. References a and b clarified. - P.8 – Record retention schedule changed. - P.10 – Deleted Remedial Action and Product Design Lead (PDL) definitions. - Rewritten to reflect re-definition of major nonconformance in GPG 5340.2. - 7. Analysis responsibilities changed from Code 302 to the QMSC. - Directorate/Staff Office analysis/action responsibilities added. - Flowchart revised to reflect process changes.
G	07/31/03	GPG re-written to incorporate changes necessitated by deployment of PR/PFR database. Concept of major/minor NCR's no longer valid. Substantive changes: - All references to "NCR/CA" changed to "NCR/CAS". - P.3 – Authority document updated. - P.4 – Deleted references to GPG 4520.2 and 5100.2. - P.7 – Updated training source information. - P.8 – Updated record custodian. - P.10 - Modified definitions (a), (c) and (d). Added definitions (g) and (h). Deleted "audit contact" definition. - Procedures – Deleted references to incoming inspection and test nonconformances as they are now handled as product nonconformances in PR/PFR in accordance with GPG 5340.2. Added NOTE in section 1 to clarify this distinction. Deleted all references distinguishing between minor and major NCRs. - Flowchart updated to reflect use of NCR/CAS for systemic problems requiring CA; use of PR/PFR, SOARS and NCR/CAS for data analysis.